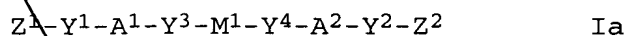


We claim:

1. A liquid-crystalline mixture comprising, as components,

A, a liquid-crystalline mixture comprising at least one compound selected from the group consisting of the compounds of the formula Ia



and of the formula Ib



where the variables, independently of one another, have the following meanings:

P is hydrogen,  $C_1$ - $C_{15}$ -alkyl, which may be monosubstituted or polysubstituted by methyl, fluorine, chlorine or bromine and in which non-adjacent  $CH_2$ -groups may be replaced by oxygen, sulfur, -CO-, -O-CO-, -CO-O- or -O-CO-O-, or a  $-Y^8-A^4-Y^6-Z^4$  group, where the variables are as defined above,

$Z^1$  to  $Z^4$  are polymerizable groups,

$Y^1$  to  $Y^8$  are each a single chemical bond, oxygen, sulfur, -O-CO-, -CO-O-, -O-CO-O-, -CO-NR-, -NR-CO-, -O-CO-NR-, -NR-CO-O- or -NR-CO-NR-,

R is hydrogen or  $C_1$ - $C_4$ -alkyl,

$A^1$  to  $A^4$  are spacers having 1 to 30 carbon atoms, in which the carbon chain may be monosubstituted or polysubstituted by methyl, fluorine, chlorine or bromine and/or interrupted by ether oxygen, thioether sulfur or by non-adjacent imino or  $C_1$ - $C_4$ -alkylimino groups,

$M^1$  is a mesogenic group of the formula Ic

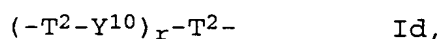


and

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M<sup>2</sup> is a mesogenic group of the formula Id



5 where the variables in the formulae Ic and Id, independently of one another, are as defined below:

10 T<sup>1</sup>, T<sup>1'</sup> and T<sup>2</sup> are divalent saturated or unsaturated carbocyclic or heterocyclic radicals,

Y<sup>9</sup> and Y<sup>10</sup> are bridging units as defined for Y<sup>1</sup> to Y<sup>8</sup> or -CH<sub>2</sub>-O-, -O-CH<sub>2</sub>-, -CH=N-, -N=CH- or -N=N-,

15 r is a value of 0, 1, 2 or 3,

where the radicals T<sup>2</sup> and Y<sup>10</sup>, in the case where r is not 0, may be identical or different,

20 B) if desired, further additives selected from the group consisting of

b1) photoinitiators,

25 b2) reactive thinners and

b3) diluents,

30 C) if desired, further additives taken from the group consisting of

c1) antifoams and deaerators,

c2) lubricants and flow-control agents,

35 c3) thermally curing or radiation-curing auxiliaries,

c4) substrate wetting auxiliaries,

40 c5) wetting and dispersion auxiliaries,

c6) hydrophobicizing agents,

45 c7) adhesion promoters and

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c8) auxiliaries for improving the scratch resistance,

D) if desired, further additives selected from the group consisting of

d1) dyes and

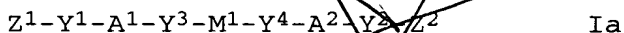
d2) pigments,

and

E) if desired, further additives selected from the group consisting of light, heat and/or oxidation stabilizers.

2. A liquid-crystalline composition as claimed in claim 1, comprising, as component A),

a liquid-crystalline mixture comprising at least one compound of the formula Ia



and at least one compound of the formula Ib



where the variables are as defined in claim 1.

3. A liquid-crystalline composition as claimed in claim 1 or 2, comprising, as further additives in component B),

b1) at least one photoinitiator,

b2) at least one reactive thinner containing photopolymerizable groups, and, if desired,

b3) diluents,

and, if desired, further additives selected from the group consisting of components C), D) and E).

4. Liquid-crystalline composition as claimed in claim 1 or 2, comprising component C) and, if desired, further additives selected from the group consisting of components B), D) and E).

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5. Liquid-crystalline composition as claimed in claim 1 or 2, comprising, as component B),
- b1) at least one photoinitiator,
  - b2) at least one reactive thinner containing photopolymerizable groups, and, if desired,
  - b3) diluents,
- component C) and, if desired, further additives selected from the group consisting of components D) and E).
6. Liquid-crystalline composition as claimed in claims 1 to 5, in which the proportion of compounds of the formulae Ia and/or Ib in component A) is from 40 to 99.5% by weight, based on the total amount of component A).
7. Liquid-crystalline composition as claimed in claims 1 to 6, in which Z<sup>1</sup>-Y<sup>1</sup>-, Z<sup>2</sup>-Y<sup>2</sup>-, Z<sup>3</sup>-Y<sup>3</sup>- and, if present, Z<sup>4</sup>-Y<sup>6</sup>- are selected from the group consisting of methacryloyloxy, acryloyloxy and vinyloxy.
8. Liquid-crystalline composition as claimed in claims 1 to 7, having a viscosity of from 0.5 to 10.0 Pa·s at 20°C.
9. The use of a liquid-crystalline composition as claimed in claims 1 to 8 as a printing ink.
10. The use of a liquid-crystalline composition as claimed in claims 1 to 8 for printing or coating substrates.
11. The use of a liquid-crystalline composition as claimed in claims 1 to 8 in electro-optical components.
12. The use of a liquid-crystalline composition as claimed in claims 1 to 8 for counterfeiting-proof marking of articles.
13. The use of a liquid-crystalline composition as claimed in claims 1 to 8 for the production of films or coatings which selectively reflect light in the wavelength range from 250 to 1300 nm.
14. A polymer or polymerized film obtained by polymerizing a liquid-crystalline composition as claimed in claims 1 to 8.
15. The use of a polymerized film as claimed in claim 14 as an

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Sub A2

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.. A process for printing or coating a substrate, which comprises

17. A process for printing or coating a substrate which is at least partially transparent in the wavelength range from 250 to 1300 nm, which comprises

- 35 i) applying a liquid-crystalline composition as claimed in  
claims 1 to 8 to the substrate, and, if appropriate,  
aligning the liquid-crystalline composition on the  
substrate,
- 40 ii) if desired, applying at least one further  
non-liquid-crystalline print or at least one further  
non-liquid-crystalline layer,
- or carrying out steps i) and ii) in the reverse sequence,
- 45 iii) if desired, applying at least one absorption layer and/or  
protective layer and/or optionally thermally activatable  
adhesive layer, and

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iv) curing the prints and/or layers produced in steps i) and, if carried out, ii) and/or iii), where the curing can take place either directly after application of each individual print or each individual layer in step i) and, if carried out, ii) and/or iii) or simultaneously.

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18. A substrate to which a liquid crystalline composition as claimed in claims 1 to 8 or a polymer or polymerized film as claimed in claim 14 has been applied or which has been printed or coated by a process as claimed in claim 16 or 17.

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